

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



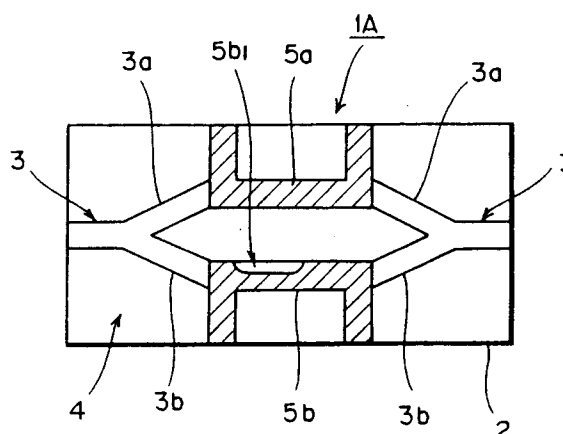
(11) Publication number:

0 445 763 A3

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **91103393.4**(51) Int. Cl.⁵: **G02F 1/225, G02F 1/313,
G02F 1/295**(22) Date of filing: **06.03.91**(30) Priority: **08.03.90 JP 54976/90**(43) Date of publication of application:
11.09.91 Bulletin 91/37(84) Designated Contracting States:
DE FR GB(88) Date of deferred publication of the search report:
03.06.92 Bulletin 92/23(71) Applicant: **FUJITSU LIMITED**
1015, Kamikodanaka Nakahara-ku
Kawasaki-shi Kanagawa 211(JP)(72) Inventor: **Hakogi, Hironao**
6-7-1-408, Shimokodanaka, Nakahara-ku
Kawasaki-shi, Kanagawa, 211(JP)
Inventor: **Takamatsu, Hisashi**
974-1-B106, Shinohara-cho, Kohoku-ku
Yokohama-shi, Kanagawa, 222(JP)(74) Representative: **Lehn, Werner, Dipl.-Ing. et al**
Hoffmann, Eitle & Partner Patentanwälte
Arabellastrasse 4
W-8000 München 81(DE)(54) **Operating point trimming method for optical waveguide modulator and switch.**

(57) Operating point trimming methods for an optical waveguide modulator and an optical waveguide switch are disclosed. One operating point trimming method for an optical waveguide modulator (1A) comprises, for example, the step of removing, while monitoring the waveform of an intensity modulated light beam, a portion (5b₁) of either one of a first and a second (5b) electrode such that the intensity modulated waveform takes on a desired waveform. One operating point trimming method for an optical waveguide switch comprises the step of removing a portion of either one of a first and a second electrode while monitoring output light beams.

FIG. 4**EP 0 445 763 A3**



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 10 3393
Page 1

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	GB-A-2 042 212 (A. CARENCO) * the whole document *	2,11-13	G02F1/225 G02F1/313 G02F1/295
Y	idem ---	1,5,9-10	
X	JOURNAL OF LIGHTWAVE TECHNOLOGY, vol. 6, no. 6, June 1988, NEW YORK US pages 1024 - 1027; H. HAGA ET AL.: 'Precise Control of Phase Constant of Optical Guide-Wave Devices by Loading Langmuir-Blodgett Films' * the whole document *	8,11-13	
X	APPLIED OPTICS, vol. 22, no. 24, December 1983, NEW YORK US pages 4082 - 4087; M.J. AHMED ET AL.: 'Mach-Zender interferometer tuning with Ta2O5 film loading' * abstract; sections 1-2; figure 1 *	4,11	
Y	APPLIED PHYSICS LETTERS, vol. 35, no. 1, July 1979, NEW YORK US pages 40 - 42; M. MINAKATA: 'Efficient LiNbO3 balanced bridge modulator/switch with a ion-etched slot' * page 41, right column, line 3 - line 25 * * figure 2 *	1,9	TECHNICAL FIELDS SEARCHED (Int. Cl.5) G02F
Y	US-A-4 709 978 (J.L. HACKEL) * abstract * * claims 1-3,6-9 *	5,10	
A	APPLIED PHYSICS LETTERS, vol. 35, no. 1, July 1979, NEW YORK US pages 38 - 40; O. MIKAMI ET AL.: 'Coupling-length adjustment for an optical directional coupler as 2x2 switch' * page 38, left column, paragraph 3 - page 39, left column, paragraph 1 * * figure 1 *	4,12-13	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 31 MARCH 1992	Examiner IASEVOLI R.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 10 3393

Page 2

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	<p>--- PATENT ABSTRACTS OF JAPAN vol. 13, no. 303 (P-896)23 March 1989 & JP-A-1 077 002 (NTT) 16 May 1988 * abstract *</p> <p>-----</p>	6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 31 MARCH 1992	Examiner IASEVOLI R.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	